

$f_0(1710)$

$$I^G(J^{PC}) = 0^+(0^{++})$$

See our mini-review in the 2004 edition of this *Review*, Physics Letters **B592** 1 (2004). See also the mini-review on scalar mesons under $f_0(500)$ (see the index for the page number).

NODE=M068

NODE=M068

 $f_0(1710)$ MASS

NODE=M068M

NODE=M068M

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
1720± 6	OUR AVERAGE	Error includes scale factor of 1.6. See the ideogram below.		
1701± 5	$\begin{smallmatrix} +9 \\ -2 \end{smallmatrix}$	4k	1 CHEKANOV 08 ZEUS	$e p \rightarrow K_S^0 K_S^0 X$
1765 $\begin{smallmatrix} +4 \\ -3 \end{smallmatrix}$	±13		ABLIKIM 06V BES2	$e^+ e^- \rightarrow J/\psi \rightarrow \gamma \pi^+ \pi^-$
1760±15	$\begin{smallmatrix} +15 \\ -10 \end{smallmatrix}$		2 ABLIKIM 05Q BES2	$\psi(2S) \rightarrow \gamma \pi^+ \pi^- K^+ K^-$
1738±30			ABLIKIM 04E BES2	$J/\psi \rightarrow \omega K^+ K^-$
1740± 4	$\begin{smallmatrix} +10 \\ -25 \end{smallmatrix}$		3 BAI 03G BES	$J/\psi \rightarrow \gamma K \bar{K}$
1740 $\begin{smallmatrix} +30 \\ -25 \end{smallmatrix}$			3 BAI 00A BES	$J/\psi \rightarrow \gamma (\pi^+ \pi^- \pi^+ \pi^-)$
1698±18			4 BARBERIS 00E	450 $p p \rightarrow p_f \eta \eta p_S$
1710±12	±11		5 BARBERIS 99D OMEG	450 $p p \rightarrow K^+ K^-, \pi^+ \pi^-$
1710±25			6 FRENCH 99	300 $p p \rightarrow p_f (K^+ K^-) p_S$
1707±10			7 AUGUSTIN 88 DM2	$J/\psi \rightarrow \gamma K^+ K^-, K_S^0 K_S^0$
1698±15			7 AUGUSTIN 87 DM2	$J/\psi \rightarrow \gamma \pi^+ \pi^-$
1720±10	±10		8 BALTRUSAIT..87 MRK3	$J/\psi \rightarrow \gamma K^+ K^-$
1742±15			7 WILLIAMS 84 MPSF	200 $\pi^- N \rightarrow 2 K_S^0 X$
1670±50			BLOOM 83 CBAL	$J/\psi \rightarrow \gamma 2\eta$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
1750±13			AMSLER 06 CBAR	1.64 $\bar{p} p \rightarrow K^+ K^- \pi^0$
1747± 5	80k	9,10	UMAN 06 E835	5.2 $\bar{p} p \rightarrow \eta \eta \pi^0$
1776±15			VLADIMIRSK...06 SPEC	40 $\pi^- p \rightarrow K_S^0 K_S^0 n$
1790 $\begin{smallmatrix} +40 \\ -30 \end{smallmatrix}$			2 ABLIKIM 05 BES2	$J/\psi \rightarrow \phi \pi^+ \pi^-$
1670±20			9 BINON 05 GAMS	33 $\pi^- p \rightarrow \eta \eta n$
1726± 7	74	10	CHEKANOV 04 ZEUS	$e p \rightarrow K_S^0 K_S^0 X$
1732±15			11 ANISOVICH 03 RVUE	
1682±16			TIKHOMIROV 03 SPEC	40.0 $\pi^- C \rightarrow K_S^0 K_S^0 K_L^0 X$
1670±26	3651	3,12	NICHITIU 02 OBLX	
1770±12		13,14	ANISOVICH 99B SPEC	0.6–1.2 $p \bar{p} \rightarrow \eta \eta \pi^0$
1730±15			3 BARBERIS 99 OMEG	450 $p p \rightarrow p_S p_f K^+ K^-$
1750±20			3 BARBERIS 99B OMEG	450 $p p \rightarrow p_S p_f \pi^+ \pi^-$
1750±30			15 ANISOVICH 98B RVUE	Compilation
1720±39			BAI 98H BES	$J/\psi \rightarrow \gamma \pi^0 \pi^0$
1775± 1.5	57	16	BARKOV 98	$\pi^- p \rightarrow K_S^0 K_S^0 n$
1690±11			17 ABREU 96C DLPH	$Z^0 \rightarrow K^+ K^- + X$
1696± 5	$\begin{smallmatrix} +9 \\ -34 \end{smallmatrix}$		8 BAI 96C BES	$J/\psi \rightarrow \gamma K^+ K^-$
1781± 8	$\begin{smallmatrix} +10 \\ -31 \end{smallmatrix}$		3 BAI 96C BES	$J/\psi \rightarrow \gamma K^+ K^-$
1768±14			BALOSHIN 95 SPEC	40 $\pi^- C \rightarrow K_S^0 K_S^0 X$
1750±15			18 BUGG 95 MRK3	$J/\psi \rightarrow \gamma \pi^+ \pi^- \pi^+ \pi^-$
1620±16			8 BUGG 95 MRK3	$J/\psi \rightarrow \gamma \pi^+ \pi^- \pi^+ \pi^-$
1748±10			7 ARMSTRONG 93C E760	$\bar{p} p \rightarrow \pi^0 \eta \eta \rightarrow 6\gamma$
~ 1750			BREAKSTONE 93 SFM	$p p \rightarrow p p \pi^+ \pi^- \pi^+ \pi^-$
1744±15			19 ALDE 92D GAM2	38 $\pi^- p \rightarrow \eta \eta n$
1713±10			20 ARMSTRONG 89D OMEG	300 $p p \rightarrow p p K^+ K^-$
1706±10			20 ARMSTRONG 89D OMEG	300 $p p \rightarrow p p K_S^0 K_S^0$
1700±15			8 BOLONKIN 88 SPEC	40 $\pi^- p \rightarrow K_S^0 K_S^0 n$
1720±60			3 BOLONKIN 88 SPEC	40 $\pi^- p \rightarrow K_S^0 K_S^0 n$
1638±10			21 FALVARD 88 DM2	$J/\psi \rightarrow \phi K^+ K^-, K_S^0 K_S^0$

OCCUR=2

OCCUR=2

OCCUR=2

OCCUR=2

1690 ± 4	22 FALVARD	88 DM2	$J/\psi \rightarrow \phi K^+ K^-, K_S^0 K_S^0$
1755 ± 8	23 ALDE	86C GAM2	$38 \pi^- p \rightarrow n 2\eta$
1730 ⁺ ₋₁₀	24 LONGACRE	86 RVUE	$22 \pi^- p \rightarrow n 2K_S^0$
1650 ± 50	BURKE	82 MRK2	$J/\psi \rightarrow \gamma 2\rho$
1640 ± 50	25,26 EDWARDS	82D CBAL	$J/\psi \rightarrow \gamma 2\eta$
1730 ± 10 ± 20	27 ETKIN	82C MPS	$23 \pi^- p \rightarrow n 2K_S^0$

OCCUR=2

¹ In the SU(3) based model with a specific interference pattern of the $f_2(1270)$, $a_2^0(1320)$, and $f_2'(1525)$ mesons incoherently added to the $f_0(1710)$ and non-resonant background.

² This state may be different from $f_0(1710)$, see CLOSE 05.

³ $J^P = 0^+$.

⁴ T-matrix pole.

⁵ Supersedes BARBERIS 99 and BARBERIS 99B.

⁶ $J^P = 0^+$, superseded by ARMSTRONG 89D.

⁷ No J^{PC} determination.

⁸ $J^P = 2^+$.

⁹ Breit-Wigner mass.

¹⁰ Systematic errors not estimated.

¹¹ K-matrix pole, assuming $J^P = 0^+$, from combined analysis of $\pi^- p \rightarrow \pi^0 \pi^0 n$, $\pi^- p \rightarrow K \bar{K} n$, $\pi^+ \pi^- \rightarrow \pi^+ \pi^-$, $\bar{p} p \rightarrow \pi^0 \pi^0 \pi^0$, $\pi^0 \eta \eta$, $\pi^0 \pi^0 \eta$, $\pi^+ \pi^- \pi^0$, $K^+ K^- \pi^0$, $K_S^0 K_S^0 \pi^0$, $K^+ K_S^0 \pi^-$ at rest, $\bar{p} n \rightarrow \pi^- \pi^- \pi^+$, $K_S^0 K^- \pi^0$, $K_S^0 K_S^0 \pi^-$ at rest.

¹² Decaying to $f_0(1370)\pi\pi$.

¹³ $J^P = 0^+$.

¹⁴ Not seen by AMSLER 02.

¹⁵ T-matrix pole, assuming $J^P = 0^+$

¹⁶ No J^{PC} determination.

¹⁷ No J^{PC} determination, width not determined.

¹⁸ From a fit to the 0^+ partial wave.

¹⁹ ALDE 92D combines all the GAMS-2000 data.

²⁰ $J^P = 2^+$, superseded by FRENCH 99.

²¹ From an analysis ignoring interference with $f_2'(1525)$.

²² From an analysis including interference with $f_2'(1525)$.

²³ Superseded by ALDE 92D.

²⁴ Uses MRK3 data. From a partial-wave analysis of data using a K-matrix formalism with 5 poles, but assuming spin 2. Fit with constrained inelasticity.

²⁵ $J^P = 2^+$ preferred.

²⁶ From fit neglecting nearby $f_2'(1525)$. Replaced by BLOOM 83.

²⁷ Superseded by LONGACRE 86.

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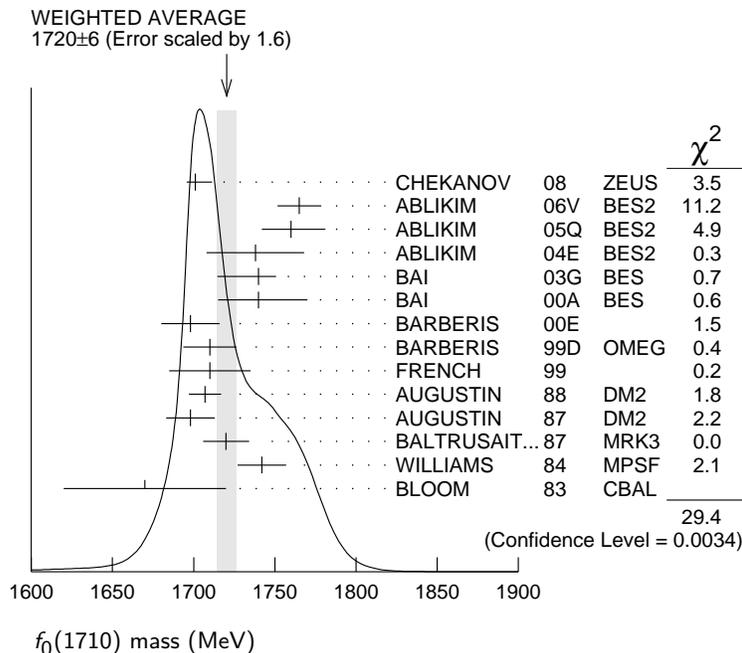
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NODE=M068M;LINKAGE=A9

NODE=M068M;LINKAGE=B2

NODE=M068M;LINKAGE=E

NODE=M068M;LINKAGE=B1

 **$f_0(1710)$ WIDTH**

NODE=M068W

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
135 ± 8	OUR AVERAGE	Error includes scale factor of 1.1.		
100 ± 24	+7 -22	4k 28 CHEKANOV	08 ZEUS	$e p \rightarrow K_S^0 K_S^0 X$
145 ± 8	±69	ABLIKIM	06V BES2	$e^+ e^- \rightarrow J/\psi \rightarrow \gamma \pi^+ \pi^-$
125 ± 25	+10 -15	29 ABLIKIM	05Q BES2	$\psi(2S) \rightarrow \gamma \pi^+ \pi^- K^+ K^-$
125 ± 20		ABLIKIM	04E BES2	$J/\psi \rightarrow \omega K^+ K^-$
166 ± 5	+15 -8	30 BAI	03G BES	$J/\psi \rightarrow \gamma K \bar{K}$
120 ± 50	+40	30 BAI	00A BES	$J/\psi \rightarrow \gamma(\pi^+ \pi^- \pi^+ \pi^-)$
120 ± 26		31 BARBERIS	00E	$450 p p \rightarrow p_f \eta \eta p_s$
126 ± 16	±18	32 BARBERIS	99D OMEG	$450 p p \rightarrow K^+ K^-, \pi^+ \pi^-$
105 ± 34		33 FRENCH	99	$300 p p \rightarrow p_f(K^+ K^-) p_s$
166.4 ± 33.2		34 AUGUSTIN	88 DM2	$J/\psi \rightarrow \gamma K^+ K^-, K_S^0 K_S^0$
136 ± 28		34 AUGUSTIN	87 DM2	$J/\psi \rightarrow \gamma \pi^+ \pi^-$
130 ± 20		35 BALTRUSAIT..	87 MRK3	$J/\psi \rightarrow \gamma K^+ K^-$
57 ± 38		36 WILLIAMS	84 MPSF	$200 \pi^- N \rightarrow 2K_S^0 X$
160 ± 80		BLOOM	83 CBAL	$J/\psi \rightarrow \gamma 2\eta$

• • • We do not use the following data for averages, fits, limits, etc. • • •

148 ± 40	-30	AMSLER	06 CBAR	$1.64 \bar{p} p \rightarrow K^+ K^- \pi^0$
188 ± 13		80k 29,37 UMAN	06 E835	$5.2 \bar{p} p \rightarrow \eta \eta \pi^0$
250 ± 30		VLADIMIRSK..	06 SPEC	$40 \pi^- p \rightarrow K_S^0 K_S^0 n$
270 ± 60	-30	38 ABLIKIM	05 BES2	$J/\psi \rightarrow \phi \pi^+ \pi^-$
260 ± 50		29 BINON	05 GAMS	$33 \pi^- p \rightarrow \eta \eta n$
38 ± 20	-14	74 37 CHEKANOV	04 ZEUS	$e p \rightarrow K_S^0 K_S^0 X$
144 ± 30		39,40 ANISOVICH	03 RVUE	
320 ± 50	-20	40,41 ANISOVICH	03 RVUE	
102 ± 26		TIKHOMIROV	03 SPEC	$40.0 \pi^- C \rightarrow K_S^0 K_S^0 K_L^0 X$
267 ± 44		3651 30,42 NICHITIU	02 OBLX	
220 ± 40		43,44 ANISOVICH	99B SPEC	$0.6-1.2 p \bar{p} \rightarrow \eta \eta \pi^0$
100 ± 25		30 BARBERIS	99 OMEG	$450 p p \rightarrow p_s p_f K^+ K^-$
160 ± 30		30 BARBERIS	99B OMEG	$450 p p \rightarrow p_s p_f \pi^+ \pi^-$
250 ± 140		45 ANISOVICH	98B RVUE	Compilation
30 ± 7		57 46 BARKOV	98	$\pi^- p \rightarrow K_S^0 K_S^0 n$
103 ± 18	+30 -11	35 BAI	96C BES	$J/\psi \rightarrow \gamma K^+ K^-$
85 ± 24	+22 -19	30 BAI	96C BES	$J/\psi \rightarrow \gamma K^+ K^-$
56 ± 19		BALOSHIN	95 SPEC	$40 \pi^- C \rightarrow K_S^0 K_S^0 X$
160 ± 40		47 BUGG	95 MRK3	$J/\psi \rightarrow \gamma \pi^+ \pi^- \pi^+ \pi^-$
160 ± 60	-20	35 BUGG	95 MRK3	$J/\psi \rightarrow \gamma \pi^+ \pi^- \pi^+ \pi^-$
264 ± 25		34 ARMSTRONG	93C E760	$\bar{p} p \rightarrow \pi^0 \eta \eta \rightarrow 6\gamma$
200 to 300		BREAKSTONE	93 SFM	$p p \rightarrow p p \pi^+ \pi^- \pi^+ \pi^-$
< 80 90% CL		48 ALDE	92D GAM2	$38 \pi^- p \rightarrow \eta \eta N^*$
181 ± 30		49 ARMSTRONG	89D OMEG	$300 p p \rightarrow p p K^+ K^-$
104 ± 30		49 ARMSTRONG	89D OMEG	$300 p p \rightarrow p p K_S^0 K_S^0$
30 ± 20		35 BOLONKIN	88 SPEC	$40 \pi^- p \rightarrow K_S^0 K_S^0 n$
350 ± 150		30 BOLONKIN	88 SPEC	$40 \pi^- p \rightarrow K_S^0 K_S^0 n$
148 ± 17		50 FALVARD	88 DM2	$J/\psi \rightarrow \phi K^+ K^-, K_S^0 K_S^0$
184 ± 6		51 FALVARD	88 DM2	$J/\psi \rightarrow \phi K^+ K^-, K_S^0 K_S^0$
122 ± 74	-15	52 LONGACRE	86 RVUE	$22 \pi^- p \rightarrow n 2K_S^0$
200 ± 100		BURKE	82 MRK2	$J/\psi \rightarrow \gamma 2\rho$
220 ± 100	-70	53,54 EDWARDS	82D CBAL	$J/\psi \rightarrow \gamma 2\eta$
200 ± 156	-9	55 ETKIN	82B MPS	$23 \pi^- p \rightarrow n 2K_S^0$

²⁸In the SU(3) based model with a specific interference pattern of the $f_2(1270)$, $a_2^0(1320)$, and $f_2'(1525)$ mesons incoherently added to the $f_0(1710)$ and non-resonant background.

²⁹Breit-Wigner width.

³⁰ $J^P = 0^+$.

³¹T-matrix pole.

NODE=M068W

OCCUR=2

OCCUR=2

OCCUR=2

OCCUR=2

OCCUR=2

OCCUR=2

NODE=M068W;LINKAGE=HE

NODE=M068W;LINKAGE=BW

NODE=M068W;LINKAGE=A8

NODE=M068W;LINKAGE=TP

- 32 Supersedes BARBERIS 99 and BARBERIS 99B.
 33 $J^P = 0^+$, supersedes by ARMSTRONG 89D.
 34 No J^{PC} determination.
 35 $J^P = 2^+$.
 36 No J^{PC} determination.
 37 Systematic errors not estimated.
 38 This state may be different from $f_0(1710)$, see CLOSE 05.
 39 (Solution I)
 40 K-matrix pole, assuming $J^P = 0^+$, from combined analysis of $\pi^- p \rightarrow \pi^0 \pi^0 n$, $\pi^- p \rightarrow K \bar{K} n$, $\pi^+ \pi^- \rightarrow \pi^+ \pi^-$, $\bar{p} p \rightarrow \pi^0 \pi^0 \pi^0$, $\pi^0 \eta \eta$, $\pi^0 \pi^0 \eta$, $\pi^+ \pi^- \pi^0$, $K^+ K^- \pi^0$, $K_S^0 K_S^0 \pi^0$, $K^+ K_S^0 \pi^-$ at rest, $\bar{p} n \rightarrow \pi^- \pi^- \pi^+$, $K_S^0 K^- \pi^0$, $K_S^0 K_S^0 \pi^-$ at rest.
 41 (Solution I)
 42 Decaying to $f_0(1370) \pi \pi$.
 43 $J^P = 0^+$.
 44 Not seen by AMSLER 02.
 45 T-matrix pole, assuming $J^P = 0^+$
 46 No J^{PC} determination.
 47 From a fit to the 0^+ partial wave.
 48 ALDE 92D combines all the GAMS-2000 data.
 49 $J^P = 2^+$, (0^+ excluded).
 50 From an analysis ignoring interference with $f_2'(1525)$.
 51 From an analysis including interference with $f_2'(1525)$.
 52 Uses MRK3 data. From a partial-wave analysis of data using a K-matrix formalism with 5 poles, but assuming spin 2. Fit with constrained inelasticity.
 53 $J^P = 2^+$ preferred.
 54 From fit neglecting nearby $f_2'(1525)$. Replaced by BLOOM 83.
 55 From an amplitude analysis of the $K_S^0 K_S^0$ system, superseded by LONGACRE 86.

NODE=M068W;LINKAGE=BD
 NODE=M068W;LINKAGE=C3
 NODE=M068W;LINKAGE=A1
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 NODE=M068W;LINKAGE=KM

NODE=M068W;LINKAGE=K2
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 NODE=M068W;LINKAGE=AV
 NODE=M068W;LINKAGE=NS
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 NODE=M068W;LINKAGE=4A
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 NODE=M068W;LINKAGE=A9

NODE=M068W;LINKAGE=B2
 NODE=M068W;LINKAGE=E
 NODE=M068W;LINKAGE=A

$f_0(1710)$ DECAY MODES

Mode	Fraction (Γ_i/Γ)
Γ_1 $K \bar{K}$	seen
Γ_2 $\eta \eta$	seen
Γ_3 $\pi \pi$	seen
Γ_4 $\gamma \gamma$	
Γ_5 $\omega \omega$	seen

NODE=M068215;NODE=M068

DESIG=2;OUR EST;→ UNCHECKED ←
 DESIG=1;OUR EST;→ UNCHECKED ←
 DESIG=5;OUR EST;→ UNCHECKED ←
 DESIG=6
 DESIG=4

$f_0(1710)$ $\Gamma(i)\Gamma(\gamma\gamma)/\Gamma(\text{total})$

$\Gamma(K \bar{K}) \times \Gamma(\gamma\gamma)/\Gamma_{\text{total}}$				$\Gamma_1 \Gamma_4 / \Gamma$	
VALUE (eV)	CL%	DOCUMENT ID	TECN	COMMENT	
<110	95	56 BEHREND	89C CELL	$\gamma\gamma \rightarrow K_S^0 K_S^0$	

••• We do not use the following data for averages, fits, limits, etc. •••

<480	95	ALBRECHT	90G ARG	$\gamma\gamma \rightarrow K^+ K^-$
<280	95	56 ALTHOFF	85B TASS	$\gamma\gamma \rightarrow K \bar{K} \pi$

⁵⁶ Assuming helicity 2.

NODE=M068220

NODE=M068G2
 NODE=M068G2

$\Gamma(\pi\pi) \times \Gamma(\gamma\gamma)/\Gamma_{\text{total}}$				$\Gamma_3 \Gamma_4 / \Gamma$	
VALUE (keV)	CL%	DOCUMENT ID	TECN	COMMENT	
<0.82	95	57 BARATE	00E ALEP	$\gamma\gamma \rightarrow \pi^+ \pi^-$	

⁵⁷ Assuming spin 0.

NODE=M068G2;LINKAGE=F

NODE=M068G3
 NODE=M068G3

NODE=M068G;LINKAGE=Z

$f_0(1710)$ BRANCHING RATIOS

$\Gamma(K \bar{K})/\Gamma_{\text{total}}$				Γ_1/Γ	
VALUE		DOCUMENT ID	TECN	COMMENT	

••• We do not use the following data for averages, fits, limits, etc. •••

0.36 ± 0.12		ALBALADEJO 08	RVUE	
0.38 ^{+0.09} _{-0.19}		58,59 LONGACRE 86	MPS	$22 \pi^- p \rightarrow n 2 K_S^0$

NODE=M068225

NODE=M068R2
 NODE=M068R2

$\Gamma(\eta\eta)/\Gamma_{\text{total}}$

VALUE	DOCUMENT ID	TECN
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• • • We do not use the following data for averages, fits, limits, etc. • • •

0.22 ± 0.12	ALBALADEJO 08	RVUE
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0.18 ^{+0.03} _{-0.13}	58,59 LONGACRE 86	RVUE
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 Γ_2/Γ

NODE=M068R1
NODE=M068R1

 $\Gamma(\pi\pi)/\Gamma_{\text{total}}$

VALUE	DOCUMENT ID	TECN	COMMENT
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• • • We do not use the following data for averages, fits, limits, etc. • • •

not seen	AMSLER 02	CBAR	0.9 $\bar{p}p \rightarrow \pi^0\eta\eta, \pi^0\pi^0\pi^0$
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0.039 ^{+0.002} _{-0.024}	58,59 LONGACRE 86	RVUE	
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 Γ_3/Γ

NODE=M068R5
NODE=M068R5

 $\Gamma(\pi\pi)/\Gamma(K\bar{K})$

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
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0.41 ^{+0.11} _{-0.17}		ABLIKIM 06V	BES2	$e^+e^- \rightarrow J/\psi \rightarrow \gamma\pi^+\pi^-$
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• • • We do not use the following data for averages, fits, limits, etc. • • •

0.32 ± 0.14		ALBALADEJO 08	RVUE
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< 0.11	95	60 ABLIKIM 04E	BES2	$J/\psi \rightarrow \omega K^+K^-$
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5.8 ^{+9.1} _{-5.5}		61 ANISOVICH 02D	SPEC	Combined fit
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0.2 ± 0.024 ± 0.036		BARBERIS 99D	OMEG	450 $pp \rightarrow K^+K^-, \pi^+\pi^-$
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0.39 ± 0.14		ARMSTRONG 91	OMEG	300 $pp \rightarrow pp\pi\pi, ppK\bar{K}$
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 Γ_3/Γ_1

NODE=M068R6
NODE=M068R6

 $\Gamma(\eta\eta)/\Gamma(K\bar{K})$

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
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0.48 ± 0.15		BARBERIS 00E		450 $pp \rightarrow p_f\eta\eta p_s$
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• • • We do not use the following data for averages, fits, limits, etc. • • •

0.46 ^{+0.70} _{-0.38}		61 ANISOVICH 02D	SPEC	Combined fit
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< 0.02	90	62 PROKOSHKIN 91	GA24	300 $\pi^-p \rightarrow \pi^-p\eta\eta$
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 Γ_2/Γ_1

NODE=M068R7
NODE=M068R7

 $\Gamma(\omega\omega)/\Gamma_{\text{total}}$

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
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seen	180	ABLIKIM 06H	BES	$J/\psi \rightarrow \gamma\omega\omega$
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⁵⁸ From a partial-wave analysis of data using a K-matrix formalism with 5 poles, but assuming spin 2.

⁵⁹ Fit with constrained inelasticity.

⁶⁰ Using data from ABLIKIM 04A.

⁶¹ From a combined K-matrix analysis of Crystal Barrel ($0. p\bar{p} \rightarrow \pi^0\pi^0\pi^0, \pi^0\eta\eta, \pi^0\pi^0\eta$), GAMS ($\pi p \rightarrow \pi^0\pi^0n, \eta\eta n, \eta\eta'n$), and BNL ($\pi p \rightarrow K\bar{K}n$) data.

⁶² Combining results of GAM4 with those of ARMSTRONG 89D.

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NODE=M068R;LINKAGE=CH

NODE=M068R;LINKAGE=A

 $f_0(1710)$ REFERENCES

NODE=M068

ALBALADEJO 08	PRL 101 252002	M. Albaladejo, J.A. Oller		REFID=52656
CHEKANOV 08	PRL 101 112003	S. Chekanov <i>et al.</i>	(ZEUS Collab.)	REFID=52275
ABLIKIM 06H	PR D73 112007	M. Ablikim <i>et al.</i>	(BES Collab.)	REFID=51125
ABLIKIM 06V	PL B642 441	M. Ablikim <i>et al.</i>	(BES Collab.)	REFID=51507
AMSLER 06	PL B639 165	C. Amsler <i>et al.</i>	(CBAR Collab.)	REFID=51136
UMAN 06	PR D73 052009	I. Uman <i>et al.</i>	(FNAL E835)	REFID=51063
VLADIMIRSK... 06	PAN 69 493	V.V. Vladimirov <i>et al.</i>	(ITEP, Moscow)	REFID=51191
	Translated from YAF 69 515.			
ABLIKIM 05	PL B607 243	M. Ablikim <i>et al.</i>	(BES Collab.)	REFID=50450
ABLIKIM 05Q	PR D72 092002	M. Ablikim <i>et al.</i>	(BES Collab.)	REFID=50958
BINON 05	PAN 68 960	F. Binon <i>et al.</i>		REFID=50780
	Translated from YAF 68 998.			
CLOSE 05	PR D71 094022	F.E. Close, Q. Zhao		REFID=50788
ABLIKIM 04A	PL B598 149	M. Ablikim <i>et al.</i>	(BES Collab.)	REFID=49740
ABLIKIM 04E	PL B603 138	M. Ablikim <i>et al.</i>	(BES Collab.)	REFID=50174
CHEKANOV 04	PL B578 33	S. Chekanov <i>et al.</i>	(ZEUS Collab.)	REFID=49672
PDG 04	PL B592 1	S. Eidelman <i>et al.</i>	(PDG Collab.)	REFID=49653
ANISOVICH 03	EPJ A16 229	V.V. Anisovich <i>et al.</i>		REFID=49401
BAI 03G	PR D68 052003	J.Z. Bai <i>et al.</i>	(BES Collab.)	REFID=49580
TIKHOMIROV 03	PAN 66 828	G.D. Tikhomirov <i>et al.</i>		REFID=49423
	Translated from YAF 66 860.			
AMSLER 02	EPJ C23 29	C. Amsler <i>et al.</i>		REFID=48580
ANISOVICH 02D	PAN 65 1545	V.V. Anisovich <i>et al.</i>		REFID=48831
	Translated from YAF 65 1583.			

NICHITIU	02	PL B545 261	F. Nichitiu <i>et al.</i>	(OBELIX Collab.)	REFID=48848
BAI	00A	PL B472 207	J.Z. Bai <i>et al.</i>	(BES Collab.)	REFID=47426
BARATE	00E	PL B472 189	R. Barate <i>et al.</i>	(ALEPH Collab.)	REFID=47428
BARBERIS	00E	PL B479 59	D. Barberis <i>et al.</i>	(WA 102 Collab.)	REFID=47961
ANISOVICH	99B	PL B449 154	A.V. Anisovich <i>et al.</i>		REFID=46886
BARBERIS	99	PL B453 305	D. Barberis <i>et al.</i>	(Omega Expt.)	REFID=46921
BARBERIS	99B	PL B453 316	D. Barberis <i>et al.</i>	(Omega Expt.)	REFID=46922
BARBERIS	99D	PL B462 462	D. Barberis <i>et al.</i>	(Omega Expt.)	REFID=47395
FRENCH	99	PL B460 213	B. French <i>et al.</i>	(WA76 Collab.)	REFID=47491
ANISOVICH	98B	SPU 41 419	V.V. Anisovich <i>et al.</i>		REFID=46331
		Translated from UFN 168 481.			
BAI	98H	PRL 81 1179	J.Z. Bai <i>et al.</i>	(BES Collab.)	REFID=46342
BARKOV	98	JETPL 68 764	B.P. Barkov <i>et al.</i>		REFID=46616
ABREU	96C	PL B379 309	P. Abreu <i>et al.</i>	(DELPHI Collab.)	REFID=44671
BAI	96C	PRL 77 3959	J.Z. Bai <i>et al.</i>	(BES Collab.)	REFID=45169
BALOSHIN	95	PAN 58 46	O.N. Baloshin <i>et al.</i>	(ITEP)	REFID=44621
		Translated from YAF 58 50.			
BUGG	95	PL B353 378	D.V. Bugg <i>et al.</i>	(LOQM, PNPI, WASH)	REFID=44438
ARMSTRONG	93C	PL B307 394	T.A. Armstrong <i>et al.</i>	(FNAL, FERR, GENO+)	REFID=43587
BREAKSTONE	93	ZPHY C58 251	A.M. Breakstone <i>et al.</i>	(IOWA, CERN, DORT+)	REFID=43312
ALDE	92D	PL B284 457	D.M. Alde <i>et al.</i>	(GAM2 Collab.)	REFID=41591
	Also	SJNP 54 451	D.M. Alde <i>et al.</i>	(GAM2 Collab.)	REFID=44696
		Translated from YAF 54 745.			
ARMSTRONG	91	ZPHY C51 351	T.A. Armstrong <i>et al.</i>	(ATHU, BARI, BIRM+)	REFID=41744
PROKOSHKIN	91	SPD 36 155	Y.D. Prokoshkin	(GAM2, GAM4 Collab.)	REFID=41719
		Translated from DANS 316 900.			
ALBRECHT	90G	ZPHY C48 183	H. Albrecht <i>et al.</i>	(ARGUS Collab.)	REFID=41374
ARMSTRONG	89D	PL B227 186	T.A. Armstrong, M. Benayoun	(ATHU, BARI, BIRM+)	REFID=41010
BEHREND	89C	ZPHY C43 91	H.J. Behrend <i>et al.</i>	(CELLO Collab.)	REFID=40915
AUGUSTIN	88	PRL 60 2238	J.E. Augustin <i>et al.</i>	(DM2 Collab.)	REFID=40574
BOLONKIN	88	NP B309 426	B.V. Bolonkin <i>et al.</i>	(ITEP, SERP)	REFID=40580
FALVARD	88	PR D38 2706	A. Falvard <i>et al.</i>	(CLER, FRAS, LALO+)	REFID=40576
AUGUSTIN	87	ZPHY C36 369	J.E. Augustin <i>et al.</i>	(LALO, CLER, FRAS+)	REFID=40268
BALTRUSAITIS...	87	PR D35 2077	R.M. Baltrusaitis <i>et al.</i>	(Mark III Collab.)	REFID=40010
ALDE	86C	PL B182 105	D.M. Alde <i>et al.</i>	(SERP, BELG, LANL, LAPP)	REFID=21694
LONGACRE	86	PL B177 223	R.S. Longacre <i>et al.</i>	(BNL, BRAN, CUNY+)	REFID=20768
ALTHOFF	85B	ZPHY C29 189	M. Althoff <i>et al.</i>	(TASSO Collab.)	REFID=21349
WILLIAMS	84	PR D30 877	E.G.H. Williams <i>et al.</i>	(VAND, NDAM, TUFTS+)	REFID=21693
BLOOM	83	ARNS 33 143	E.D. Bloom, C. Peck	(SLAC, CIT)	REFID=21682
BURKE	82	PRL 49 632	D.L. Burke <i>et al.</i>	(LBL, SLAC)	REFID=21676
EDWARDS	82D	PRL 48 458	C. Edwards <i>et al.</i>	(CIT, HARV, PRIN+)	REFID=21677
ETKIN	82B	PR D25 1786	A. Etkin <i>et al.</i>	(BNL, CUNY, TUFTS, VAND)	REFID=20390
ETKIN	82C	PR D25 2446	A. Etkin <i>et al.</i>	(BNL, CUNY, TUFTS, VAND)	REFID=20391
